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he has failed to find a single one without living tenants. These larvae have been reared and studied by Meijere, 20 who describes 7 species, of which 6 are new. They are to be referred to the order Diptera, and belong to three different families.

Not the least remarkable characteristic of these larvae is the power they seem to possess of anti-fermentation, and which appears to retard the action of the enzymes of the fluid filling the pitchers. Experiments upon their influence upon the action of solutions of pepsin and pancreatin furnish evidence of their retarding influence. Closely related larvae, taken from pools in the vicinity, were unable to live in the pitchers; hence the anti-ferment is regarded as an adaptation to such symbiotic existence.—Geo D. Fuller.

Grape mildew.—A number of infection experiments, bringing out some of the relations between the downy mildew of the grape and its host, have been described by MÜLLER-THURGAU.21 Pot-grown grapevines were brought into a greenhouse, and only the new shoots that developed under glass were used for the experiments. The infected shoots were covered for a time with glass cases, to prevent too rapid evaporation of the drops of water containing the spores used for inoculation. The main results of the experiments are the following: No infection took place on the upper surface of the leaves unless punctures had been made in the epidermis. Infections took place readily on the lower surface if the plants were kept in a moist atmosphere. The very youngest leaves were not readily infected, a fact which the author attributes to causes within the leaf rather than to such outer factors as the dense hairy covering. Leaves a little older are most easily infected and in these the fungus grows a long time and forms spots of considerable size before the infected area dies. On the older leaves the action of the fungus is more severe. The infected spots remain small, usually 3-5 mm. in diameter, but the tissue within these spots is killed immediately. In these small spots large numbers of oospores are found. The difference in behavior of leaves of different ages is attributed to differences in moisture content or to differences in composition. -H. HASSELBRING.

Egg-formation in Cystosira and Sargassum.—NIENBURG²² reports the result of his investigation on the development of the eggs of Cystosira and Sargassum. Cystosira barbata Ag. was collected at Naples in the spring of 1907, and Sargassum linifolium was obtained from Triest in September of the following year. The paper presents briefly the nuclear divisions in the oogonium of Cystosira and the development of sporelings of Sargassum. The author

²⁰ MEIJERE, J. C. H. DE, Nepenthes-Tiere. I. Systematik. Ann. Jard. Bot. Buitenzorg Suppl. 3. pt. 2. 917-940. 1910.

²¹ MÜLLER-THURGAU, H., Infection der Weinrebe durch *Plasmopara viticola*. Centralbl. Bakt. II. **29**:683–695. *fig. 1*. 1911.

²² NIENBURG, WILHELM, Die Oogonentwicklung bei Cystosira and Sargassum. Flora 1:167–180. pls. 1, 2. figs. 9. 1910.